

REMARKS

Claims 84-92 were pending. Claims 84, 85 and 90 have been amended to specify normal ambient conditions without an exterior energy source. Support for this amendment may be found at least on page 19, lines 14-15. Claim 84 was amended to set forth the components of the manufactured article. Claim 85 was further amended to recite the application of the catalyst to either the first or second substrate surface prior to polymerization. Support for this amendment may be found at least on page 20, lines 21-25. New claims 99-102 have been added. Support for these claims may be found at least on page 20, lines 21-25. No new matter has been added. Claims 84-92 and 99-102 are now pending.

According to the Advisory Action, the application is not in condition for allowance for the reasons of record. Applicants respectfully submit that consideration of the above amendments will remove the rejections of record.

Additionally, as to Suzuki et al., cited in the previous office action, the Advisory Action states:

The reference is however directed to sandwich laminate boards for e.g. car or boat panels (e.g. col. 1), the metathesis polymer core being sandwiched between surface layers. Again, while the reference may not describe the polymer core or substrate using the term "adhesive," an "adhesive" is considered to be simply a polymer material that bonds to a substrate or bonds two substrates together. What makes the metathesis polymer intermediate layer bonded between two surface layers/substrates not an adhesive in Suzuki when a metathesis polymer layer bonded between substrate layers in applicant's invention is an adhesive?

Applicants respectfully submit that this patent has been misconstrued as teaching anything with regard to adhesives. The Suzuki et al. patent is directed to molded articles composed of a substrate and a surface layer. The substrate in Suzuki et al. cannot be viewed as an adhesive merely because the polymer layer surrounds the core or substrate, making the substrate "in between" different portions of the polymer layer. Any number of composite materials have a substrate "between" other materials-the substrate material is not an adhesive simply because it is in between the other materials of the composite.

The materials described in Suzuki et al. are the substrate and the surface layer wherein the substrate is a ring-opened polymer of a norbornene-type monomer having tricyclic or higher cyclic structure and the surface layer is a polymerized polymer sheet of an olefin polymer or a thermoplastic hydrocarbon elastomer. When these materials are used, the surface layer adheres to the substrate without the aid of any extraneous adhesive. Other materials do not adhere (see comparative examples) to the surface layer.

Even where more than one polymer sheet is described as in Example 7 of Suzuki et al., a composite including an adhesive is not taught or suggested. Unlike a typical adhesive layer, the substrate of Suzuki et al. makes up half of the thickness of the composite material which is 4 mm thick with the polymer sheets 1 mm thick. The polymer sheets encase the polymerized substrate through reaction injection molding procedures which result in a molded article, not a manufactured article of two substrates joined to each other by an intervening adhesive as is presently claimed.

The adhesive as defined in rejected claim 84 is formed by a metathesis reaction between a catalyst at the first substrate surface and a metathesizable material provided between the first substrate surface and the second substrate surface or as a component of the second substrate. The adhesive layer defined in claim 85 comprises a metathesis polymer which was polymerized upon contact with a catalyst which was applied to either the first or second substrate surface. Claim 99 is directed to a manufactured article that includes a first substrate surface, a second substrate surface and an adhesive layer interposed therebetween, wherein the first substrate surface comprises an elastomeric material and the adhesive layer comprises a metathesis polymer which was polymerized upon contact with a catalyst under normal ambient conditions without an exterior energy source. The catalyst is applied in predetermined selected areas to either the first substrate surface or the second substrate surface. The metathesis reaction thus provides a metathesis polymer which adheres together two distinct substrate surfaces.

The substrate in Suzuki et al. is formed from a liquid state by ring-opening bulk polymerization. The process of Suzuki et al. includes positioning the polymer sheet in a mold, flowing the monomer in a liquid state in a plurality of streams into the mold, polymerizing the monomer in the mold by ring-opening of the monomer, and removing the article from the mold with the polymer sheet on at least one outer

surface thereof. *Abstract.* Thus, the resulting article is a molded article of substrate and polymer sheet. No intermediate layer of adhesive is taught nor would one result from this method. Rather, to the extent the substrate is "between" the polymer sheet, that is merely a function of the manner in which the polymer sheet adheres to the substrate. The layer-forming material adheres closely to the surface of the substrate with curing and shrinkage of the polymeric material due to the ring-opening polymerization, not due to an adhesive effect.

Moreover, there is nothing taught in Suzuki et al. whereby articles can be produced by any other means than reactive injection molding, nor a teaching, as in claim 99, to provide a selected pattern of catalyst on one substrate or as in claim 85, to apply the catalyst to one or the other substrate. The polymerizate formed in this manner is distinctly different in that better adhesion occurs as compared to joining of the substrates upon the mixing of monomer and catalyst, as in Suzuki et al. The claimed article is also more economical in that the adhesion achieved in relation to the amount of catalyst is superior. The claimed articles formed with the adhesive system defined by the claims can be readily varied, since conventional spray, dip, brush, printing means can be used, whereas in the RIM process of Suzuki et al., the substrates are limited to those that can be placed into a mold cavity. The molded article of Suzuki et al. is, thus, completely different from the manufactured articles defined in the claims. In view thereof, Applicants believe Suzuki et al. is inapplicable to the subject claims, and respectfully request that the rejections thereunder be withdrawn.

Further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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Attachment to Amendment dated June 25, 2003

Mark-up of Claims 84, 85 and 90

84. (Three Times Amended) A manufactured article comprising a first and second substrate and an adhesive therebetween produced by a method for bonding a first substrate surface to a second substrate surface comprising

- (a) providing a catalyst at the first substrate surface;
- (b) providing a metathesizable material between the first substrate surface and the second substrate surface or providing a metathesizable material as a component of the second substrate; and
- (c) contacting the catalyst on the first substrate surface with the metathesizable material under normal ambient conditions without an exterior energy source so that the metathesizable material undergoes a metathesis reaction and bonds the first substrate surface to the second substrate surface.

85. (Twice Amended) A manufactured article that includes a first substrate surface, a second substrate surface and an adhesive layer interposed therebetween, wherein the first substrate surface comprises an elastomeric material and the adhesive layer comprises a metathesis polymer which was polymerized upon contact with a catalyst under normal ambient conditions without an exterior energy source, wherein the catalyst is applied prior to polymerization to either the first substrate surface or the second substrate surface.

90. (Twice Amended) A tire laminate comprising a tire carcass having an outer periphery surface, a tire tread having a bonding surface, and a metathesis polymer adhesive layer between the outer periphery surface of the tire carcass and the bonding surface of the tire tread, wherein the metathesis polymer adhesive layer was formed by polymerization upon contact with a catalyst under normal ambient conditions without an exterior energy source.